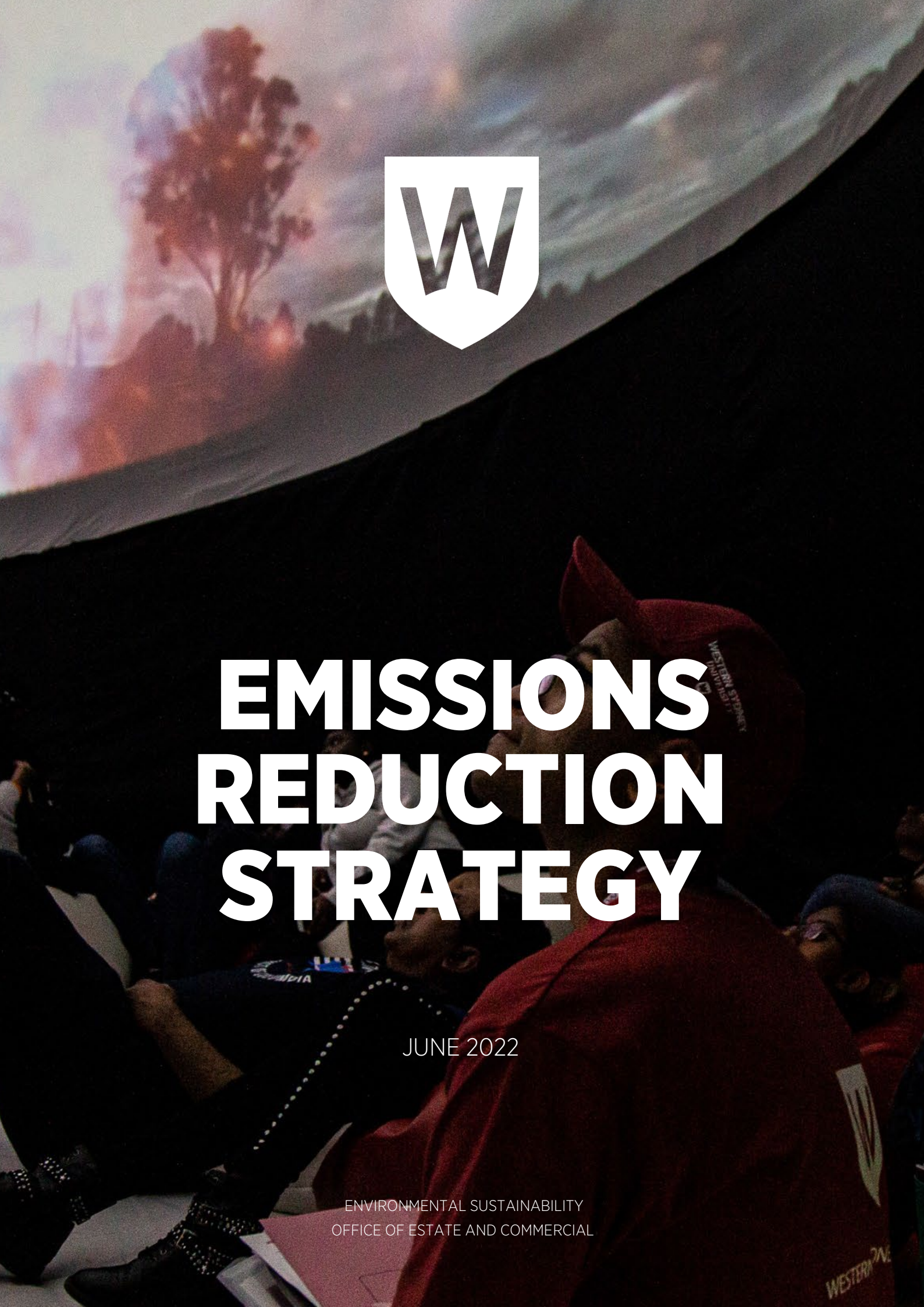

EMISSIONS REDUCTION STRATEGY

JUNE 2022

ENVIRONMENTAL SUSTAINABILITY
OFFICE OF ESTATE AND COMMERCIAL

EMISSIONS REDUCTION STRATEGY

STRATEGY AND TARGETS

Western's strategic plan Sustaining Success 2021-2026 incorporates Sustainability as a key principle, with performance measure M2 being:

- to "adopt energy renewables in campus operations and advance towards carbon neutrality in 2030"[1], and
- achieve a target of 100% renewables in energy supply by 2025.

In late 2021, Western joined the United Nations-led 'Race to Zero for Universities and Colleges' pledge to fast-track carbon neutrality targets to address climate change. The ambitious new targets set were to achieve:

- Carbon Neutral by 2023, and
- Climate Positive by 2029[2].

The targets and strategies also align with the Western's decadal strategy Sustainability and Resilience 2030 with interconnected priority statements including Climate Action, Partnership, Regenerative Systems, Economic Transitions and Resilient Cities[3] . Western is also committed to the United Nations Sustainable Development Goals, as an educational signatory to the SDSN Australia, New Zealand and Pacific Initiative. Emissions reduction strategies provide an opportunity to work across these principles in relation to complementary mitigation and adaptation strategies for climate action, building regenerative and resilient initiatives through partnerships towards just and ethical economic transition.

The emissions reduction strategies identified for Carbon Neutral accreditation are expected to provide a platform for process improvement towards the bolder target of Climate Positive by 2029. Interim operational targets are to achieve:

- Climate Active accreditation by July 2022, and
- Pilot target of Carbon Positive by 2025 for Hawkesbury campus.

1 Western Sydney University Strategic Plan: Sustaining Success 2021-2026
2 Targets set in United Nations-led 'Race to Zero for Universities and Colleges' pledge.
3 Western's decadal strategy "Sustainability and Resilience 2030"

PROGRESS TOWARDS TARGETS

In Australia, Carbon Neutral accreditation by the federal Climate Active program follows a clear process of estimating our organisational carbon footprint and purchasing accredited offsets. While our established National Greenhouse and Energy Reporting (NGER) includes emissions from: Scope 1 (fuels and gas) and Scope 2 (electricity) sources, Carbon Neutral accreditation requires the inclusion of Scope 3 emissions such those from the supply chains of products and services, staff commuting and travel, water supply and waste streams. The business transitions towards becoming a low carbon organisation are significant, and offset prices are rising due to increasing demand worldwide. A future Climate Positive state, whereby we capture more carbon than we emit, will require these business transitions to be in place.

To progress towards the target of Carbon Neutral by 2023, a process to achieve Climate Active accreditation is underway with the consultants 100% Renewables, with funding support from NSW DPIE's Sustainable Advantage program. The technical process of boundary definition, estimation of carbon footprint, validation, offsetting, and accreditation is expected to be completed mid-2022, with a stakeholder engagement process underway in parallel.

Relevant strategies action planning for all themes relating to emissions sources in our estimated carbon footprint include those relating to Western's:

- Environmental Sustainability Action Plan (ESAP).
- Environmental Sustainability: Commitment.
- Resilience and Climate Change theme of ESAP.
- Carbon Neutrality Implementation Plan.

EMISSION REDUCTION STRATEGIES

The following sections outline the targets and goals for emissions reductions relating to:

- Energy consumption and on-site solar generation (Scope 1 and 2)
- Green Star accredited buildings and precinct planning (Scope 3)
- Supply chain management (Scope 3).

Strategies are also outlined for:

- Data management, and
- Stakeholder engagement.

SCOPE 1 AND 2 – DIRECT AND INDIRECT EMISSIONS THROUGH ENERGY CONSUMPTION

As outlined in target M2 of "Western's Strategic Plan: Sustaining Success 2021-2026", Western is committed to a target of 100% renewable energy in campus operations by 2025.

Our percentage of energy consumption from renewable sources for electricity (supply and on-site solar) and total energy (electricity, gas and fuels) is summarised below in Table 1.

Table 1. Percentage renewables in electricity and total energy consumption 2018-2022 [4]

Calendar Year	2018	2019	2020	2021	2022 (projected)
Electricity [5]	0.84%	1.07%	1.47%	45.73%	99.99%
Total Energy [6]	0.58%	0.75%	1.03%	32.41%	69.50%

Indirect emissions (Electricity - Scope 2)

→ Target 100% renewables in all campus electricity supply by 2022

Renewable sourcing of electricity supply

From 1st July 2021, Western switched its large site electricity supply contract to 100% accredited GreenPower from renewable sources, equating to a 39% reduction of the carbon footprint estimated in the 2021 Carbon Neutrality Implementation Plan. From 1st July 2022, all remaining electricity contracts will change over to 100% renewables as accredited by GreenPower.

On-site solar generation

On-site solar generation has included a focus on rooftop solar PV, solar carparks, and solar hot water heating for central energy plants. From 2018 to 2021, on-site solar generation increased by 191% from 277 to 807 kW of generating capacity (rooftop PV and pilot solar carpark).

Western plans to continue installation of both carpark and rooftop solar PV, with a minimal target of increasing generation by >500kW additional generating capacity per annum.

[4] Based upon data for National Greenhouse and Energy Reporting (NGER) 2018/19-2020/21
[5] Electricity consumption includes supply contracts and on-site solar generation
[6] Total energy consumption includes electricity supply, on-site solar generation, natural gas and fuels

Direct emissions (Natural gas, petrol/diesel etc - Scope 1)

- Target 40% energy renewables in campus operations by 2023
- Target 100% energy renewables in campus operations by 2026

Fuel switching

Fuel switching is a continuing strategy going forward for petrol/diesel powered vehicles and natural gas-powered HVAC and water heating systems. Transitions underway now and into the future include:

- Replacing natural gas-powered HVAC and water heating to high efficiency solar hot water heating, and
- Provision of EV charging stations and consideration towards an electric vehicle fleet.

Solar hot water heating

Solar hot water heating to replace gas preheated hot water, with more efficient solar hot water heating systems in high demand areas, such as central energy plants. Installation of these systems have already occurred at central plants located at Parramatta South and Kingswood campuses, along with several smaller buildings used for campus food services and tenants on Hawkesbury campus.

The program is ongoing, with the aim of a 25% reduction in gas-powered units per annum between 2022-2026.

Electric vehicle charging

Electric Vehicle (EV) charging stations supplied by GreenPower have been installed on four campuses; Parramatta South, Hawkesbury, Campbelltown, and Kingswood. The Kingswood charging station is integrated with the pilot solar carpark. During 2022-2023, additional EV chargers are to be rolled out and the first fleet EV pilot will be trialled.

Consideration of fleet strategy is a necessary step going forward, with high use vehicles and buses a clear priority. The nature of some specialist vehicles such as fire fighting vehicles and commercial farm vehicles will necessitate investigation of low carbon fuels and potential continuing offsetting of a small proportion of vehicles.

Overall, these actions should reduce Western's consumption and overall emissions into the future.

Indirect emissions (Value Chain - Scope 3)

- Target 30% reduction in all supply chain categories by 2030

Key strategies for Scope 3 emission reductions relate to:

- Continued roll out of low carbon Green Star accredited buildings, and
- Supply chain management.

Green Star accredited buildings and precinct planning

Through the Western Growth strategy, Western is committed to the transition towards increasing Green Star accredited buildings and precincts, which are energy efficient and increasingly low carbon. In 2022, Western will be involved with 11 Green Star accredited buildings including some of the newer campuses location in prominent CBD locations:

- the Peter Shergold Building at 1 Parramatta Square
- the Ngara Nguru Building in Liverpool CBD
- the Parramatta Engineering Innovation Hub, Hassall Street in collaboration with UNSW, which also has WELL rating,
- the IQ Precinct at Westmead.

Western is involved with other tenants and building owners in Parramatta Square in Parramatta City Council's Green Star Community accreditation process for the public domain of the Square. These are described further in Western's Green Star Buildings and Precincts website.

Expected completions of current projects underway include:

- Bankstown City campus (mid 2022),
- Macarthur Medical, the new Science Building on Hawkesbury campus, the Macarthur Medical Research Centre (late 2022),
- Campbelltown Justice Precinct (2024),
- Science Building Hawkesbury campus (2025),
- Milperra redevelopment (2026),
- Parramatta North redevelopment (2028), and
- Werrington redevelopment (2040).

Campus redevelopment and precinct planning processes underway will continue to be a key platform for integrating themes common to Green Star buildings and communities, including:

- Environmental sustainability and resilience
- Linkages to public transport and local opportunity for active transport
- Incorporation of circular economy principles and practices
- Commercial viability and tenant partnerships
- Innovation.

All initiatives within the Western Growth portfolio aim to reduce Western's carbon footprint through innovation and technology.

Supply chain management

- Target 30% reduction in all supply chain categories by 2030

Western is committed to achieving a minimum of 30% reduction by 2030 in all supply chain categories, based upon a baseline of carbon emissions estimated in the calendar year 2021 carbon footprint. These will include those relating to:

- Waste and recycling
- Water supply
- Facilities operation and energy efficiency
- Building construction, fit out and refurbishment
- Business services and office consumables
- Waste streams and food services
- Staff and student travel (business travel, intercampus travel and commuting), noting that intercampus and student travel was excluded from the 2021 baseline.

Given the dynamic changes in the organisational footprint of numerous campuses and facilities, emission reductions will be analysed in relation to both the total footprint, scope, and category of emission sources, along with area usage statistics and disaggregation by campus and facility (such as Gross Floor Area), and number of staff and students (such as staff Full Time Equivalent numbers and Equivalent Full-Time Student Load).

Initiatives, strategies, and case examples are presented in Western's Environmental Sustainability Action Plan and related website.

Over the mid-term, a range of strategies will be required to reduce offsetting requirements for Carbon Neutral accreditation and progress towards Climate Positive status, including:

- Continuous improvement in our Emissions Reduction plan identified through stakeholder engagement.
- Initiatives towards Climate Positive status for Hawkesbury campus by 2025; and
- Climate Positive by 2029.

Data management

Data management will continue to build upon systems already established for mandatory annual National Greenhouse Energy Reporting (NGER) and organisational financial processes. A suite of data management tools provides complementary data requirements including data base management, data interrogation using data visualisation tools with adaptation for infographics, trend data and reporting. External auditors and technical consultants are utilised for methodological reporting requirements, such as for NGER submissions and application of Climate Active emissions factors.

Continued improvement will include continued development of:

- Internal data stewardship role, compiling all data in a manner consistent with Western's facility structure reported for NGER.
- Data governance to ensure data quality, accountability, and responsibility by each business area with data ownership roles.
- Clarification with Western's Finance team regarding application of internal GL codes to appropriate emission sources.
- Investigation of opportunities to streamline data collection through automation, data platforms.

Data, interpretations, and infographics relating to our environmental performance is available on Western's Environmental Performance website and reported up to Western's Senior Executive Group.

Table 2. Summary of targets, measurement and verification

	TARGET	TARGET DATE	MEASUREMENT AND VERIFICATION
Carbon Neutrality	Carbon Neutral accreditation	2023	Climate Active methods and accreditation
Renewable electricity supply	100% renewable electricity	2023	% GreenPower in large & small sites contracts
On-site solar generation	>500 kW PV generation pa	YEARLY	Asset inventory and NGER reporting
Total energy supply	100% renewables in energy supply	2025	NGER reporting
	25% pa gas-powered HVAC	YEARLY	Asset inventory and NGER reporting
	Fleet strategy	2025	Asset inventory and NGER reporting
Supply chain	30% reduction in all supply chain categories	2030	Climate Active methods and accreditation

Stakeholder engagement

Internal stakeholder engagement is recognised as critical for data governance, awareness of how our carbon footprint is calculated, and collaborative action planning by the broad range of subject matter experts across Western. Stakeholder engagement has been undertaken in 2022 and will continue into the future to ensure ongoing commitment by all areas of Western.

WEBSITE REFERENCES

Strategy and targets

Western Sydney University Strategic Plan: Sustaining Success 2021-2026
https://www.westernsydney.edu.au/__data/assets/pdf_file/0005/1819895/OVCH_5133_Sustaining_Success_2021-2026-_Booklet_web_AC.pdf

Vice Chancellor's "Race to Zero" pledge
https://www.westernsydney.edu.au/newscentre/news_centre/more_news_stories/western_sydney_university_joins_race_to_zero_pledge_for_climate_action

Sustainability and Resilience 2030
https://www.westernsydney.edu.au/__data/assets/pdf_file/0011/1838252/SR_DECADAL_STRATEGY_FINALWEB.pdf

Western's commitment to the SDGs
https://www.westernsydney.edu.au/driving_sustainability/sustainability_education/curriculum/sdg_2030

Environmental sustainability: commitment
https://www.westernsydney.edu.au/environmental_sustainability/home/action_plan/policy_and_commitment

Resilience and Climate Change theme (Environmental Sustainability Action Plan)
https://westernsydney.edu.au/environmental_sustainability/home/action_plan/Resilience_Climate

Climate Ready Discussion paper
https://westernsydney.edu.au/__data/assets/pdf_file/0006/1881078/Climate_Ready_Discussion_Paper_2021_August.pdf

Carbon Neutrality Implementation Plan
https://westernsydney.edu.au/__data/assets/pdf_file/0011/1881236/Carbon_Neutrality_Implementation_Plan_-_Executive_Summary.pdf

Energy consumption and on-site solar generation (Scope 1 and 2)

Sustainable energy theme (Environmental Sustainability Action Plan)
https://www.westernsydney.edu.au/environmental_sustainability/home/action_plan/sustainable_energy

Sustainable Energy Strategy
https://westernsydney.edu.au/environmental_sustainability/plans/SustainableEnergyStrategy.pdf

Green Star accredited buildings and precinct planning (Scope 3)

Green Star Buildings & Precincts (Environmental Sustainability Action Plan)
https://www.westernsydney.edu.au/environmental_sustainability/home/action_plan/green_star_buildings_and_precincts

Supply chain management (Scope 3)

Environmental Sustainability Action Plan
https://www.westernsydney.edu.au/environmental_sustainability/home/action_plan

Data management

Environmental Performance Pages
https://westernsydney.edu.au/environmental_sustainability/home/environmental_performance